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BY ELECTRONIC FILING

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, D.C. 20554

Re: *Ex Parte* Presentation of Polaris Wireless, Inc.
PS Docket No. 07-114

Dear Ms. Dortch:

On Monday, August 12, Polaris Wireless, Inc. ("Polaris") representatives Michael Doherty, David De Lorenzo, and Bhavin Shah participated in a conference call meeting with Nicole McGinnis, David Siehl, and Dana Zelman of the FCC's Public Safety and Homeland Security Bureau related to the above-captioned proceeding.

The meeting was held to address questions raised by the FCC concerning: (1) indoor location accuracy performance for E911 emergency services, particularly the outlook over the next five years and Polaris's technology capability roadmap, (2) practical testing requirements and methodologies and how these could be applied to potential indoor trial design and "real world" performance predictions, and (3) cost models as related to indoor location platform deployments. Polaris responded to each topic as summarized below (and in the companion documents attached hereto).

Regarding indoor location accuracy performance as characterized by 67% and 90% accuracy as well as yield, Polaris expects its deployed high-performance hybrid control-plane location solution of A-GPS and WLS™ (WLS is the Polaris implementation of 3GPP-standardized RF pattern-matching or RFPM) to achieve 50 meters at 67% accuracy and 150 meters at 90% accuracy for all indoor environments, and improve to 30 meters at 67% accuracy and 100 meters at 90% accuracy for indoor environments equipped with standard indoor network infrastructure (*e.g.*, distributed antenna systems, femto cells, metro cells) in the 3-5 year timeframe; in all cases, the location yield will remain at 100% for all emergency call requests. Polaris explained that the ongoing deployment of LTE technology with O-TDOA (observed time difference of arrival) measurements combined with the increased availability of Inter-RAT measurements will deliver positive impacts on future network-based indoor location systems. Polaris also emphasized the importance of leveraging complementary location systems, as is becoming common in the wireless location industry – in the Polaris case a high-performance hybrid of WLS, which has good accuracy in dense urban, urban, and indoor environments plus 100% yield, with A-GPS, which has good accuracy and availability in rural and suburban environments. Polaris explained that these projections are based on its experience in the recent CSRIC indoor location trials (where Polaris participated with an offline non-hybrid version of its deployed E911 location technology), numerous U.S. customer deployments, and extensive multi-market compliance testing.

During the discussion of vertical (Z-axis) location, Polaris described the many changes occurring in the wireless industry that are projected to improve vertical location accuracy performance. These changes include higher penetration of indoor network infrastructure (*e.g.*, distributed antenna systems, femto cells, metro cells), higher penetration of sensors in smart phones (*e.g.*, altimeters), and migration to or integration with user-plane technologies such as Wi-Fi. With such ongoing changes, Polaris explained that the vertical location accuracy performance of its system is expected to achieve floor-level precision across all indoor environments in the 3-5 year timeframe.

Polaris also explained that these indoor and vertical location accuracy projections *do not require* expensive new hardware overlay systems (*e.g.*, specialized beacons, proximity based solutions), any new handset radio technology which may be required to receive signals from such hardware overlay systems, or dedicated network infrastructure to receive/process the uplink signals from a handset on 2G, 3G, or 4G air interfaces. Rather, Polaris explained that the improved performance of its software-based high-performance hybrid control-plane location solution is a natural consequence of the ongoing evolution of the cellular network ecosystem and that it supports and seamlessly migrates from existing 2G and 3G air interfaces to the emerging 4G/LTE specification.

On the topic of testing indoor location accuracy, Polaris was supportive of the FCC's desire that testing be comprehensive and representative of "real world" conditions. One particular point that Polaris emphasized in this regard was that due to the great variability of the indoor environment, statistically meaningful indoor test results require a large number of indoor test points, ideally distributed throughout representative indoor environments. While this approach was not followed in the recent CSRIC indoor location trials, due to cost and time constraints, Polaris described how future trials easily could be improved to deliver a comprehensive set of statistically meaningful accuracy performance results. Specifically, Polaris proposed an improved indoor testing methodology based on its many years of experience in field trial design and experimental testing. When such a methodology is followed and there is reasonable diversity in building types being tested, Polaris explained that this enables "real world" predictions and extensions to be made for various indoor environments and for many common building types.

Regarding cost models related to indoor location platform deployments, Polaris explained that existing E911 location platforms, such as the Polaris high-performance hybrid control-plane location solution, can be extended to the indoor environment with only minimal effort and complexity, and without requiring new hardware overlay systems (*e.g.*, specialized beacons, proximity based solutions). Polaris described how a software-based E911 control-plane location solution not only will serve all legacy handset users across all air interfaces, but also will enable best-in-class performance for the latest hardware and radio access technologies. Polaris further explained the challenges faced by boutique solutions regarding long deployment lead-times for new hardware overlay systems and a lack of support for legacy user equipment, the expense of dedicated infrastructure to receive/process the uplink signals from a handset, and the practical difficulties resulting from standards body protocol inertia.

Finally, Polaris is completely supportive of extending E911 location accuracy expectations to the indoor environment, from where so many emergency calls originate, and Polaris emphasized that there are *no technological or monetary barriers* to achieving indoor location accuracy performance approximately on par with the FCC's Phase II E911 location accuracy mandate.

Pursuant to Section 1.1206(b)(2) of the Commission's rules, I am filing this notice electronically in the above-referenced docket. Please contact me directly with any questions.

Respectfully Submitted,

/s/ Michele C. Farquhar

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